



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/656,089

09/05/2003

Michael R. Plumb

58974US002

9928

32692 7590 01/05/2007
3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER

ALLISON, ANDRAE S

ART UNIT

PAPER NUMBER

2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

01/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/656,089	Applicant(s) PLUMB ET AL.	
	Examiner Andrae S. Allison	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) 1-10, 16-18, 23-32, 38-40, 45-53, 58 and 59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-12, 15, 19-22, 33, 36-37, 41-44, 54-55, 57, 60 and 61 is/are rejected.
- 7) ☐ Claim(s) 13, 14, 35, 36 and 56 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :09/03/2004; 10/22/2004; 11/03/2004; 01/03/2005; 01/24/2006; 06/01/2006; 06/06/2006 .

DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species:

- Species I, drawn to figure 7, and defined specifically by claims 1-3, 23-25 and 45-56.
- Species II, drawn to figure 9, and defined specifically by claims 4-10, 26-32, and 47-53.
- Species III drawn to figures 12, 13 and 19, and defined specifically by claims 11-15, 19-22, 33-37, 41-44, 54-57 and 60-61
- Species IV drawn to figure 17, and defined specifically by claims 16-18, 38-40 and 58-59.

2. The above-identified species are distinct. Related inventions are distinct if the inventions as claimed do not overlap in scope, i.e., are mutually exclusive; the inventions as claimed are not obvious variants; and the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect. See MPEP § 806.05(j). In the instant case, species I-IV are mutually exclusive embodiment and are non-obvious variants.

Art Unit: 2624

Because these inventions are distinct for the reasons given above and the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Steven Berns on December 20, 2006 a provisional election was made with traverse to prosecute the invention of "Counting Biological Agents on Biological Growth Plates", application number 10/656089 claims 1-61. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-10, 16-18, 23-32, 38-40, 45-53 and 58-59 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 11-12, 15, 33-34, 37, 54-55 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiss (US Patent No.: 6,243,486) in view of Vaidyanathan (US Patent No.: 5,671,290).

As to claim 11, Weiss discloses a method (counting objects in an image, column 2, line 2) comprising: receiving one or more images (column 2, line 60-63) of a biological growth medium (micro-organism, column 2, line 54); identifying a first number (initial count, column 4, line 23-61) of biological agents (colonies, column 2, line 54) associated with an interior portion of the biological growth medium; identifying a second number (succeeding count, column 4, line 65-67 and column 5, lines 1-13) of biological agents associated with a perimeter portion of the biological growth medium; and excluding from the second number one or more biological agents within a defined distance (preset threshold distance, column 7, line 19) from an edge of a growth area of the growth medium when the first number is less than a threshold (note that in succeeding counts, a proximity filter can be used to determine if intimately identified colonies should be separated, column 7, lines 15-21).

Weiss does not disclose expressively wherein the first count is associated with an interior portion of the biological growth medium and the second count is associate with the perimeter portion of the biological growth medium.

Vaidyanathan discloses a method for automatically identifying objects that includes wherein the first count is associated with an interior portion of the biological growth medium and the second count is associate with the perimeter portion of the biological growth medium (see column 37, lines 27-33, where a histogram of an original image is divided, and a search and count is carried out in the sub-images for a least one colony). At the time of the invention, it would have been obvious to a person of ordinary

Art Unit: 2624

skill in the art to added the method for automatically identifying objects of Vaidyanathan to the method of counting objects of Weiss to accurately identify valid biological colonies in various parts of the biological growth medium including the perimeter and the interior of the biological growth.

All the limitations of claim 33 are discussed in claim 11 above except a computer readable medium comprising computer readable instructions and a processor. Weiss discloses a processor (14, see Fig 1), however, does not expressly disclose a computer readable medium comprising computer readable instructions. A computer readable medium comprising computer readable instructions is well known in the art and therefore, it would have been obvious to have included the computer readable medium comprising computer readable instructions in the system for counting colonies of Weiss for storing instructions (software) on the computer readable medium such as memory.

As to claim 54, this claim differs from claim 11 only in that claim 54 is system whereas, claim 11 is method and the limitation an imaging device to generate one or more images of a biological growth medium is additively recited. Weiss clearly discloses an imaging device (10, see Fig 1) to generate one or more images of a biological growth medium (column 2, line 61).

As to claim 12, Weiss teaches the method further comprising excluding from the second number the one or more biological agents within the defined distance from the

Art Unit: 2624

edge of the growth area of the growth medium when the first number is less than a threshold only when the one or more biological agents within the defined distance from the edge define areas smaller than a threshold area (column 7, lines 45-55).

As to claim 15, neither Weiss or Vaidyana disclose the method, wherein the interior portion comprises approximately 75 percent of the growth area of the growth medium and the perimeter portion comprises approximately 25 percent of the growth area of the growth medium. However, Applicant has not disclosed that having the interior portion comprises approximately 75 percent of the growth area of the growth medium and the perimeter portion comprises approximately 25 percent of the growth area of the growth medium provides an advantage, is used for a particular purpose or solves a stated problem. Therefore, it would have been obvious to have the interior portion comprises approximately 75 percent of the growth area of the growth medium and the perimeter portion comprises approximately 25 percent of the growth area of the growth medium.

Claim 34 differ from claim 12, only in that claim 34 is computer readable medium claim whereas, claim 12 is method claim. Thus, claim 34 is analyzed as previously discussed with respect to claim 12 above.

Claim 37 differ from claim 15, only in that claim 37 is computer readable medium claim whereas, claim 15 is method claim. Thus, claim 37 is analyzed as previously

discussed with respect to claim 15 above.

Claim 55 differ from claim 12, only in that claim 55 is system claim whereas, claim 12 is method claim. Thus, claim 55 is analyzed as previously discussed with respect to claim 12 above.

Claim 57 differ from claim 15, only in that claim 57 is system claim whereas, claim 15 is method claim. Thus, claim 57 is analyzed as previously discussed with respect to claim 15 above.

6. Claims 19-22, 41-44 and 60-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiss (US Patent No.: 6,243,486) in view of Vaidyanathan (US Patent No.: 5,671,290) further in view of Perry (US Patent No.: 3,811,036).

All the limitations of claim 19 are discussed in claim 11 above except, flagging the biological growth medium for additional review if the second number is greater than a factor multiplied by the first number. However, neither Weiss or Vaidyana disclose flagging the biological growth medium for additional review if the second number is greater than a factor multiplied by the first number.

Perry discloses a mirco-biological colony counter (column 1, line 7) that includes wherein, flagging the biological growth medium for additional review if the second number is greater than a factor multiplied by the first number (column 4, line 67 and column 5, lines 1-2). At the time of the invention, it would have been obvious to a

Art Unit: 2624

person of ordinary skill in the art to added mirco-biological colony counter of Perry to the method of counting objects of Weiss as modified by Vaidyanathan to accurately count biological colonies in a biological growth medium.

All the limitations of claim 41 are discussed in claim 19 above except a computer readable medium comprising computer readable instructions and a processor. Weiss discloses a processor (14, see Fig 1), however, does not expressly disclose a computer readable medium comprising computer readable instructions. A computer readable medium comprising computer readable instructions is well known in the art and therefore, it would have been obvious to have included the computer readable medium comprising computer readable instructions in the system for counting colonies of Weiss for storing instructions (software) on the computer readable medium such as memory.

As to claim 60, this claim differs from claim 19 only in that claim 60 is system whereas, claim 19 is method and the limitation an imaging device to generate one or more images of a biological growth medium is additively recited. Weiss clearly discloses an imaging device (10, see Fig 1) to generate one or more images of a biological growth medium (column 2, line 61).

As to claim 20, neither Weiss, Vaidyana nor Perry disclose the method of wherein the factor is approximately 1.5. However, Applicant has not disclosed that having a factor of approximately 1.5 provides an advantage, is used for a particular

Art Unit: 2624

purpose or solves a stated problem. Therefore, it would have obvious to have a factor of approximately 1.5.

As to claim 21, note the discussion above, Weiss and Perry teach the method, wherein the biological growth medium is a Petri plate (column 2, line 55 of Weiss), the biological agents comprise bacterial colonies (column 2, line 55 of Weiss) and flagging the biological growth medium for additional review comprises flagging the biological growth medium for review by a technician (column 5, lines 1-2 of Perry).

As to claim 22, note the discussion of claim 15, above.

Claim 42 differ from claim 20, only in that claim 42 is computer readable medium claim whereas, claim 20 is method claim. Thus, claim 42 is analyzed as previously discussed with respect to claim 20 above.

Claim 43 differ from claim 21, only in that claim 43 is computer readable medium claim whereas, claim 21 is method claim. Thus, claim 43 is analyzed as previously discussed with respect to claim 21 above.

Claim 44 differ from claim 22, only in that claim 44 is computer readable medium claim whereas, claim 22 is method claim. Thus, claim 44 is analyzed as previously

Art Unit: 2624

discussed with respect to claim 22 above.

Claim 61 differ from claim 22, only in that claim 61 is system claim whereas, claim 22 is method claim. Thus, claim 61 is analyzed as previously discussed with respect to claim 22 above.

Allowable Subject Matter

Claims 13, 14, 35, 36 and 56 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made part of the record and not relied upon is considered pertinent to applicant's disclosure.

Krejcarek et al (US Patent No.: 5,744,322) is cited to teach an apparatus for counting microorganism.

Misaki et al (US Patent No.: 5,117,467) is cited to teach a colony counting apparatus.

Olsztyn et al (US Patent No.: 6,002,789) is cited to teach a bacteria colony counter and classifier.

Inquires

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrae S. Allison whose telephone number is (571) 270-1052. The examiner can normally be reached on Monday-Friday, 8:00 am - 5:00 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (571) 272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2624

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrae Allison

December 22, 2006

A.A.


JINGGE WU
SUPERVISORY PATENT EXAMINER